

**The Refined Packard  
Key Acquisition & Technology  
Workforce**

**April 1999**

# OVERVIEW

- BACKGROUND
- REFINING THE UPDATED PACKARD
- SECOND COUNT RESULTS AND IMPLEMENTATION
- REFINED PACKARD DETAILS

BACKGROUND

# NO COMMON UNDERSTANDING

## ■ Def Acq Workforce Improvement Act (DAWIA)

- ◆ Focused on professional acquisition personnel
- ◆ Intended to support career development
- ◆ Narrowly focused & Service /CMD/Org dependent

## ■ FY98 Auth Act - Section 912(a)

- ◆ All personnel in Acquisition Organizations  
(less civilians in maintenance depots)
- ◆ Too broad--Incorporates non-acquisition positions
- ◆ No acq positions in non-acquisition organizations

## ■ Congress uses 'shoppers and buyers'

## ■ DoD uses an integrated life-cycle approach

- ◆ More than just 'shoppers and buyers'

# BACKGROUND

- Proposed 124,000 House cut - “too many shopper and buyers”
- April 1997 HNSC Hearing
- Acting USD (A&T): consistent independently verifiable workforce count
- Jefferson Solutions hired
- Congress directed DoD to use a standard approach (FY98 NDAA, Section 912(b))

## DoD-WIDE IDENTIFICATION MUST:

- Be consistent, uniform, independently-verifiable
- Account for the professional acquisition workforce
- Provide effective management of the workforce--  
Education, Training, & Career Development
- Support intent of Congress
- Support manpower planning and programming

# JEFFERSON SOLUTIONS' APPROACH

- Interviewed/Consulted over 40 officials
- OSD, Services, DMDC, DLA, Congress, GAO, & NDU
- Reviewed various models/approaches
- Reviewed previous reports, hearings, etc.
- Ran data (DMDC) for alternative approaches
- Packard Commission's approach showed most promise

# SOLUTIONS' RECOMMENDATION

- Apply an updated Packard approach
- Use occupations and organization data
- Category I occupations across DoD
- Category II occupations in certain orgs.



# PACKARD/UPDATED PACKARD

## ■ Original Packard

- ◆ Eight occupations counted across DoD
- ◆ Certain occupations counted if in Acquisition Organizations
- ◆ Yielded 154,732 personnel (31 March '97 data)

## ■ Updated Packard (September '97 Report)

- ◆ 21 occupations counted across DoD in Group I
- ◆ Certain occupations counted if in Group II Organizations
- ◆ Yields 177,613 personnel, plus 11,545 admin support (total: 189,158--31 March '97 data)

# APPROACH ACCEPTED

- Jefferson Solutions' September '97 Report accepted by OSD and Congressional Staff
  - ◆ FY98 NDAA Section 912(a) cuts down to 25,000 from 124,000 proposed by the House
- On December 18, 1997, 912(b) Report to Congress, SecDef advised that beginning on October 1, 1998, the AWF will be uniformly identified using a Packard Model with further refinements to the approach in the Jefferson Solutions' Report
- Working Group set up to refine the updated Packard

# REFINING THE UPDATED PACKARD

# REFINEMENT PROCESS

- Working Group reps from Services/Fourth Estate DACMs & key DoD Orgs/Agencies
- Focus on Education, Training, and Career Development, not cut-oriented
- Life-cycle framework (R&D thru Disposal)
- Two counts to validate the methodology using a baseline of 31 March '98 data
- Category III added up front to recognize one size does not fit all
- Acquisition for goods *and* services

# REFINEMENT PROCESS (cont)

- Used life-cycle to identify the functions
- Who was acquiring services/products at all levels
- Linked occupations and organizations
- Acquisition functions that apply across DoD:
  - ◆ **Requirements Development, Systems Planning, Research, Development, Testing, Evaluation, and Science & Engineering**
  - ◆ **Program Management**
  - ◆ **Information Technology**
  - ◆ **Industrial/Contract Property Management**
  - ◆ **Contracting and Procurement**
  - ◆ **Production**
  - ◆ **Contract Auditing**
  - ◆ **Business, Cost Estimating and Financial Management**
  - ◆ **Management and Administration**
  - ◆ **Logistics Planning and Management**

# RESOLUTION OF TOUGH ISSUES

- Army Corps of Engineers part of the acquisition workforce
  - ◆ Yes --Only military-funded counted
  - ◆ Category 1 (Contracting) counted whether military or non-military funded
- Agreement on Group II Acq Organizations
- Logistics -- Distinguish between Acq & Ops
- Science & Technology/Research & Development professionals included as part of the acquisition workforce

# SAMPLE REFINEMENTS

- 6 occupations counted across DoD in Group I
- Certain occupations counted if in Group IIA Organizations (excludes S&T organizations)
- Certain occupations counted if in Group IIB S&T Organizations
- Category III for everyone else or deletions from Cat I and Cat II
- No support or clerical- KEY personnel only
- Name changed to Acquisition and Technology Workforce to recognize the level of expertise involved in the DoD acquisition mission

# SECOND COUNT RESULTS AND IMPLEMENTATION



## SECOND COUNT (Mar 99) BY CATEGORY (31 March 98 data)

Category I	25,567
Category IIA	85,504
Category IIB(S&E)	7,865
Category IIB(Other)	924
Category III (net adds)	13,201
Total Civilians	133,061
Total Military	16,378
<b>TOTAL DoD A&amp;TWF</b>	<b>149,439</b>

## **CIVILIAN OCC/FUNCTION (31 Mar 98 Data)**

<b>Engineers (all 8xx)</b>	<b>44,117</b>
<b>Scientists (all 13xx &amp; 4xx)</b>	<b>4,476</b>
<b>Math. &amp; Statistics (all 15xx but 1550)</b>	<b>2,400</b>
<b>Comm/Computers (334, 391, 392 &amp; 1550)</b>	<b>9,370</b>
<b>Management (340, 343 &amp; 346)</b>	<b>15,509</b>
<b>Contracting (1102)</b>	<b>19,387</b>
<b>Purchasing (1105)</b>	<b>2,158</b>
<b>Financial Management (1160, &amp; all 5xx but 511)</b>	<b>3,618</b>
<b>Bus. &amp; Ind.(246, 1101, 1103, 1104, 1130, 1150, 1152,1910)</b>	<b>12,989</b>
<b>Admin &amp; Programs (301)</b>	<b>5,116</b>
<b>Auditing (511)</b>	<b>3,692</b>
<b>Proc. Assist.</b>	<b>2,650</b>
<b>Supply Pgm. Mgmt (2003)</b>	<b>1,753</b>
<b>Misc.</b>	<b>5,826</b>

DoD Key Acquisition and Technology  
Workforce (Second Count (Mar 99) based on 20  
Nov 98 USD (A&T) Memo - 31 March 98 data)

■ By Component

◆ Army	42,365
◆ Navy	49,683
◆ Air Force	33,421
◆ Fourth Estate	<u>23,970</u>
◆ Total DoD Key A&TWF	149,439

# THE NUMBERS IN CONTEXT

- Represents the ‘key’ (not ‘core’) workforce
  - ◆ The term ‘core’ is reserved for government only functions/positions per DRID #20
  - ◆ Government/non-government review pending
- Data only as good as the DMDC database
  - ◆ Services and Fourth Estate responsible for updating the information
- Nose count, not position count--yet
- Occupations don’t equal job functions in all cases
  - ◆ Not all 44k Engineers performing engineering

# Some Reasons for the Differences in the Size of the Key A&TWF Between the Services

- Use of FFRDCs and other nonorganic resources (contractor support)
- Requirements to fund and manage construction projects
- Role of engineers in carrying out Service missions
- Differences in variety and breadth of Service missions, organizational differences, and varieties in overall Service funding levels (e.g., TOA)

# METHOD MEETS REQUIREMENTS

- Consistent, uniform, verifiable DoD-wide definition
- Identifies key in-house DoD professionals performing acquisition and technology functions
- Meets intent of Congress

# RECOMMENDATIONS

- The following recommendations are made with a view toward taking advantage of and improving the capabilities offered by the algorithm:
  - ◆ Establish a policy adopting the Refined Packard algorithm as the approved method for officially identifying the key A&TWF in FY 1999
  - ◆ Continue to collect workforce data, as previously identified, through FY 1999, since the FY 1999 NDAA still refers to using acquisition organization personnel for reduction purposes
  - ◆ Continue to support the working groups, develop an integrated workforce management strategic plan, policies, directives, and other documentation, as required, for fully implementing the Refined Packard algorithm in FY 2000

# IMPLEMENTATION

- Assess education, training, and career development (Working Group established)
  - ◆ What training is required of the newly identified personnel (if anything is required)
  - ◆ What functional board structure is best, etc., “resource method developed.”
  - ◆ Increase the education and training budget
- Manpower Planning and Programming
  - ◆ Cross-walk into the PPBS manpower and \$\$
  - ◆ Working Group established, method developed
  - ◆ Identifying the support workforce
  - ◆ Identifying government/non-government total resource planning and programming



# IMPLEMENTATION (cont)

- New workforce policies effective FY2000
  - ◆ Building policy/transition plan for new personnel
  - ◆ Update directives, instructions, and other documentation relating to workforce management
  - ◆ Ensure databases support the changes
- Previous DAWIA personnel will see little, if any, impact based on the refined Packard
- Identification refinement for FY99 done--further refinements to continue for FY00 and FY01
- New identification method is assumed in the FY98 NDAA 912(c) studies
- 912c Future Workforce Study will build a strategic plan

# CONCLUSIONS

- The Refinement process proved to be an effective means of refining the updated Packard algorithm
- The model presents, at a point in time, a clear picture of what the key A&T Workforce looks like and what people are doing
- DoD should adopt this new methodology as the best means for identifying the key A&TWF positions, and DoD should ensure that it is applied in a uniform, independently verifiable, and consistent manner throughout DoD
- The new, refined Packard definition should be used as an effective DoD management tool

REFINED PACKARD DETAILS  
FOR  
THE ACQUISITION AND  
TECHNOLOGY WORKFORCE

# CATEGORY I OCCUPATIONS

**246 - Contractor Industrial Relations**

**340 - Program Management**

**1102 - Contracting**

**1103 - Industrial Property Management**

**1105 - Purchasing**

**1150 - Industrial Specialist**

# CATEGORY IIA OCCUPATIONS

<b>150 - Geography</b>	<b>818 - Engineering Drafting</b>
<b>180 - Psychologist</b>	<b>819 - Environmental Engineering</b>
<b>301 - Administration and Program</b>	<b>830 - Mechanical Engineering</b>
<b>334 - Computer Specialist</b>	<b>840 - Nuclear Engineering</b>
<b>343 - Management/Program Analyst</b>	<b>850 - Electrical Engineering</b>
<b>346 - Logistics Management</b>	<b>854 - Computer Engineering</b>
<b>391 - Telecommunications Specialist</b>	<b>855 - Electronics Engineering</b>
<b>392 - Communications Specialist</b>	<b>858 - Biomedical Engineering</b>
<b>413 - Physiologist</b>	<b>861 - Aerospace Engineering</b>
<b>501 - Financial Administration</b>	<b>871 - Naval Architecture</b>
<b>505 - Financial Management</b>	<b>873 - Ship Surveying</b>
<b>510 - Accounting</b>	<b>880 - Agricultural Engineering</b>
<b>511 - Auditing (DCAA only)</b>	<b>881 - Petroleum Engineering</b>
<b>560 - Budget Analysis</b>	<b>890 - Mining Engineering</b>
<b>801 - General Engineering</b>	<b>892 - Ceramic Engineering</b>
<b>806 - Materials Engineering</b>	<b>893 - Chemical Engineering</b>
<b>810 - Civil Engineering</b>	<b>894 - Welding Engineering</b>

## CATEGORY IIA OCCUPATIONS (cont)

<b>896 - Industrial Engineering</b>	<b>1360 - Oceanography</b>
<b>1021 - Office Drafting</b>	<b>1361 - Navigational Information</b>
<b>1101 - General Business &amp; Industry</b>	<b>1370 - Cartography</b>
<b>1104 - Property Disposal</b>	<b>1372 - Geodesy</b>
<b>1130 - Public Utilities Specialist</b>	<b>1373 - Land Surveying</b>
<b>1152 - Production Control</b>	<b>1510 - Actuary</b>
<b>1160 - Financial Analysis</b>	<b>1515 - Operations Research</b>
<b>1301 - General Physical Science</b>	<b>1520 - Mathematics</b>
<b>1310 - Physics</b>	<b>1529 - Mathematical Statistician</b>
<b>1313 - Geophysics</b>	<b>1530 - Statistician</b>
<b>1315 - Hydrology</b>	<b>1550 - Computer Science</b>
<b>1320 - Metallurgy</b>	<b>1910 - Quality Assurance</b>
<b>1330 - Space Science</b>	<b>2003 - Supply Program Mgmt.</b>
<b>1350 - Geology</b>	<b>2150 - Transportation Operations</b>

# Group IIA Organizations\*

(Acquisition and Technology is their primary mission)

<u>Army</u>	<u>Air Force</u>	<u>Navy</u>	<u>Other DoD*</u>
AAE	AFMC	NAVAIR	USD(A&T)
AMC	ASAF (A)	NAVSUP	DLA
ASA(RDA)	PEO	NAVSEA	USSOCOM-SOAC
USACE**		NAVFAC	BMDO
USAMRMC		PEO/DRMS	DISA
USASMDC		SPAWAR	DCAA
		ASN(RDA)	TRICARE-Supt Off.
		USMC SYS COM	

\*Only applicable UICs (Services) or organizational codes (Fourth Estate) for these organizations are included in the count

\*\*USACE includes the military funded activities only (exception in Cat I is that all 1102s are included for USACE)

# CATEGORY IIB OCCUPATIONS (S&T)

## Category IIB Scientists and Engineers

- |                                     |                                      |
|-------------------------------------|--------------------------------------|
| 150 - Geography                     | 471 - Agronomy                       |
| 180 - Psychologist                  | 480 - General Fish & Wildlife Admin. |
| 401 - General Biological<br>Science | 482 - Fishery Biology                |
| 403 - Microbiology                  | 486 - Wildlife Biology               |
| 408 - Ecology                       | 487 - Animal Science                 |
| 413 - Physiologist                  | 601 - General Health Science         |
| 414 - Entomology                    | 602 - Medical Officer                |
| 430 - Botany                        | 610 - Nurse                          |
| 434 - Plant Pathology               | 630 - Dietitian & Nutritionist       |
| 435 - Plant Physiology              | 644 - Medical Technologist           |
| 440 - Genetics                      | 660 - Pharmacist                     |
| 454 - Range Conservation            | 662 - Optometrist                    |
| 457 - Soil Conservation             | 665 - Speech Pathology & Audiology   |
| 460 - Forestry                      | 690 - Industrial Hygiene             |
| 470 - Soil Science                  | 701 - Veterinary Medical Science     |



# **CATEGORY IIB OCCUPATIONS (S&T) (Cont)**

## **Category IIB Scientists and Engineers**

<b>801 - General Engineering</b>	<b>890 - Agricultural Engineering</b>
<b>803 - Safety Engineering</b>	<b>881 - Petroleum Engineering</b>
<b>804 - Fire Prevention Engineering</b>	<b>892 - Ceramic Engineering</b>
<b>806 - Materials Engineering</b>	<b>893 - Chemical Engineering</b>
<b>807 - Landscape Architecture</b>	<b>894 - Welding Engineering</b>
<b>808 - Architecture</b>	<b>896 - Industrial Engineering</b>
<b>810 - Civil Engineering</b>	<b>1301 - General Physical Science</b>
<b>818 - Engineering Drafting</b>	<b>1306 - Health Physics</b>
<b>819 - Environmental Engineering</b>	<b>1310 - Physics</b>
<b>830 - Mechanical Engineering</b>	<b>1313 - Geophysics</b>
<b>840 - Nuclear Engineering</b>	<b>1315 - Hydrology</b>
<b>850 - Electrical Engineering</b>	<b>1320 - Chemistry</b>
<b>854 - Computer Engineering</b>	<b>1321 - Metallurgy</b>
<b>855 - Electronics Engineering</b>	<b>1330 - Space Science</b>
<b>858 - Biomedical Engineering</b>	<b>1340 - Meteorology</b>
<b>861 - Aerospace Engineering</b>	<b>1350 - Geology</b>
<b>871 - Naval Architecture</b>	<b>1360 - Oceanography</b>

# **CATEGORY IIB OCCUPATIONS (S&T) (cont)**

## **Category IIB Scientists and Engineers**

- 1370 - Cartography**
- 1372 - Geodesy**
- 1373 - Land Surveying**
- 1380 - Forest Products Technology**
- 1382 - Food Technology**
- 1384 - Textile Technology**
- 1386 - Photographic Technology**
- 1515 - Operations Research**
- 1520 - Mathematics**
- 1529 - Mathematical Statistician**
- 1530 - Statistician**
- 1550 - Computer Science**

# **CATEGORY IIB OCCUPATIONS (S&T) (cont)**

## **Category IIB Other Occupations at S&T Organizations**

**301 - Administration and Program**

**334 - Computer Specialist**

**343 - Management/ Program  
Analyst**

**346 - Logistics Management**

**391 - Telecommunications Specialist**

**392 - Communications Specialist**

**501 - Financial Administration**

**505 - Financial Management**

**510 - Accounting**

**511 - Auditing**

**560 - Budget Analysis**

**873 - Ship Surveying**

**1021 - Office Drafting**

**1101 - General Business &  
Industry**

**1104 - Property Disposal**

**1130 - Public Utilities Specialist**

**1152 - Production Control**

**1160 - Financial Analyst**

**1361 - Navigational Information**

**1510 - Actuary**

**1910 - Quality Assurance**

**2003 - Supply Program  
Management**

**2150 - Transportation Operations**

# Group IIB Organizations\*

(Organizations with S&T as their primary mission)

<u>Army</u>	<u>Air Force</u>	<u>Navy</u>	<u>Other DoD*</u>
ARI	AFOSR	ONR	DARPA
ARL	AFRL	NRL	DTRA(DSWA)
ARO			

## Service Warfare Centers\*\*

\*All of the science and technology organizations are to be considered as a Group IIB organization, including the medical research and development communities. Services will add the appropriate medical research organizations and other S&T organizations as part of the count. Please note that BMDO is considered as Category IIA for the count based on their acquisition activities.

\*\*These organizations are not strictly S&T but do have personnel that are spending 50 percent or more of their time performing S&T (6.1-6.3 funded) work and will be counted as part of Category IIB.

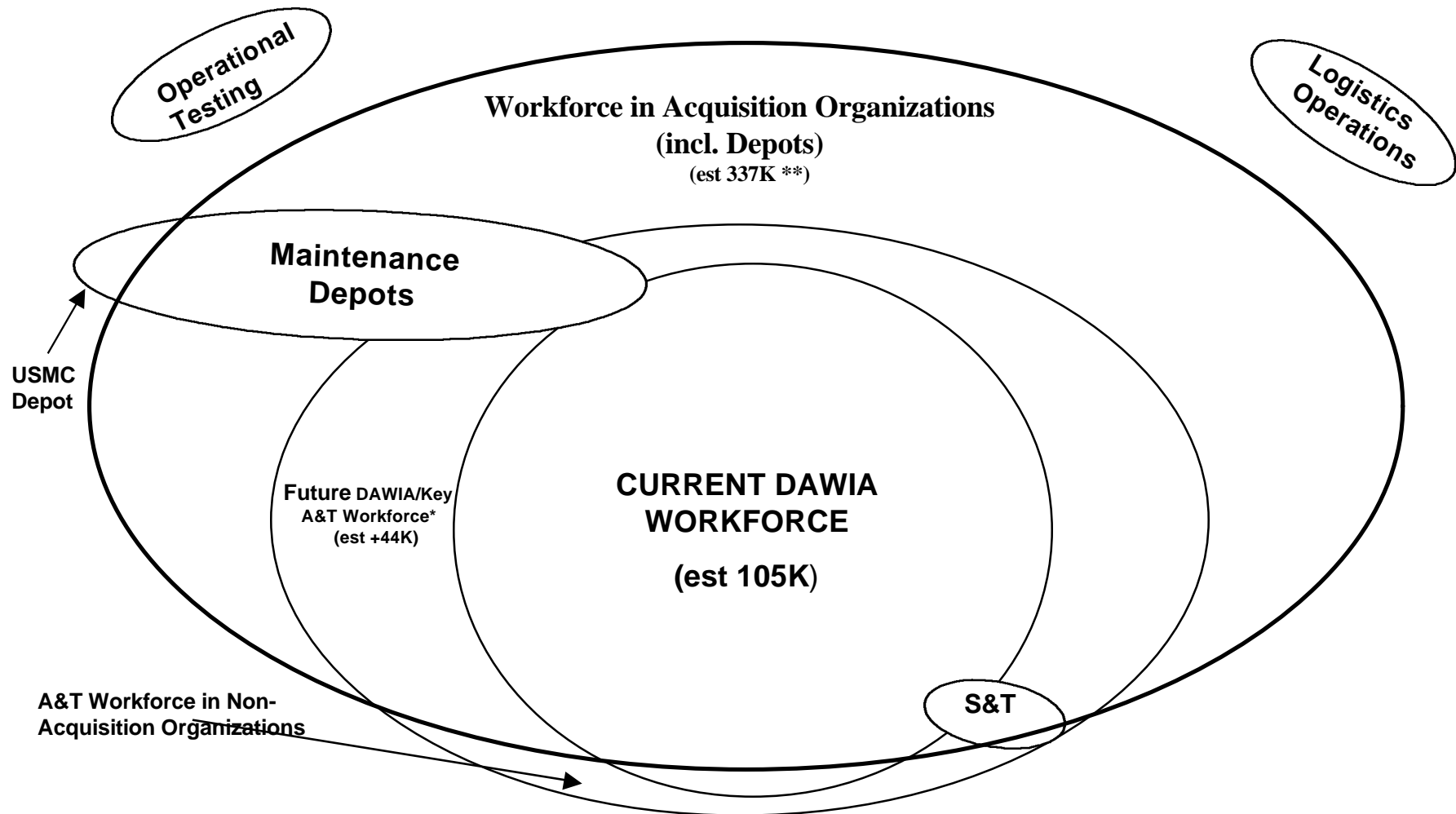
## CATEGORY III

This category is used to:

- Add personnel not covered by the previous categories who perform key acquisition and technology functions
- Delete personnel from the previous categories that are not key acquisition and technology personnel.
- Add enlisted personnel who are key acquisition and technology personnel.
- Add DAWIA personnel not covered by the previous categories.

# Acquisition Workforce: Relationships

(FY98 Data)



\* Training requirements for future DAWIA Workforce: TBD

\*\* Section 912(a) Acquisition Organizations plus Depots